

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) In a program development environment, a method comprising the steps of:

~~providing, via a programming language, a language processor with built-in support for a parse tree data structure written in a base language, said parse tree data structure represented as a class, said class the basis for a plurality of parse tree objects, said parse tree objects including methods that retrieve values for base language objects;~~

defining an assignment function, said assignment function taking a plurality of parse tree structures as arguments; and

calling said assignment function to determine the value of at least one assignment within at least one of said base language and a base language extension to said base language.

2. (Currently Amended) The method of claim 1, comprising the further steps of:

~~representing said parse tree data structure as a class, said class being the basis for a plurality of parse tree objects, said parse tree objects including methods able to retrieve values for base language objects;~~

defining said assignment function in more than one class, said assignment function taking a plurality of parse tree objects as arguments; and

overloading said assignment function.

3. (original) The method of claim 2 wherein said assignment function overloads a mathematical operator.

4. (original) The method of claim 2 wherein the overloading of said assignment function is based on the context of the base language objects.

5 (original). The method of claim 2, comprising the further step of:

evaluating said class at compile-time, and

adjusting the resulting class definitions from said evaluation to increase the efficiency of run-time performance.

6. (original) The method of claim 2, comprising the further step of:

overloading a mathematical operator with said assignment function to alter the sequence of evaluation of operands usually followed in said programming language, said overloading designating the order of operand evaluation.

7. (original) The method of claim 2, comprising the further step of:

calling a method in said parse tree object to determine the type of operator at the root of a tree.

8. (original) The method of claim 2, comprising the further step of:

calling a method in said parse tree object to retrieve one of an associated left and right tree.

9. (original) The method of claim 1 wherein the root of said parse tree data structure is one of a constant, variable, a mathematical symbol and a mathematical expression.

10. (original) The method of claim 1 wherein said assignment function is not explicitly defined.

11. (original) The method of claim 1 wherein said assignment function is used to identify in-place operations.

12. (original) The method of claim 1 wherein said assignment function is used to identify and perform multiply and accumulate ("MAC") operations.

13. (original) The method of claim 1 wherein said base language is one of C++, Java, System-C, VHDL, Verilog, C#, IDL, MATLAB and a language based on the .Net framework.

14. (Currently Amended) In a program development environment, a method comprising the steps of:

providing, via a programming language, a language processor with built-in support for a parse tree data structure written in a base language, said parse tree data structure represented as a

class, said class the basis for a plurality of parse tree objects, said parse tree objects including methods that retrieve values for base language objects;

defining an assignment function, said assignment function taking a plurality of parse tree structures as arguments;

calling said assignment function to determine the value of at least one assignment within at least one of ~~a~~the base language and a base language extension for the base language; and

generating code for an embedded processor using said parse tree data structure.

15. (Currently Amended) In a program development environment, a method comprising the steps of:

providing, via a programming language, a language processor with built-in support for a parse tree data structure written in a base language, said parse tree data structure represented as a class, said class the basis for a plurality of parse tree objects, said parse tree objects including methods that retrieve values for base language objects;

defining an assignment function, said assignment function taking a plurality of parse tree structures as arguments;

calling said assignment function to determine the value of at least one assignment within at least one of ~~a~~the base language and a base language extension for the base language; and

using said parse tree data structure in software emulation.

16. (Currently Amended) A computer-readable medium for use in a program development environment, said instructions medium holding instructions for execution of a method on an electronic device, said method comprising the steps of:

one or more instructions for providing programming language;

one or more instructions for providing a language processor via the programming language, said language processor having built-in support for a parse tree data structure written in a base language, said parse tree data structure represented as a class, said class the basis for a plurality of parse tree objects, said parse tree objects including methods that retrieve values for base language objects;

one or more instructions for defining an assignment function, said assignment function taking a plurality of parse tree structures as arguments; and

one or more instructions for calling said assignment function to determine the value of at least one assignment within at least one of said base language and a base language extension to said base language.

17. (Currently Amended) The medium of claim 16, wherein said instructions method further ~~comprise: s the further steps of:~~

one or more instructions for representing said parse tree data structure as a class, said class being the basis for a plurality of parse tree objects, said parse tree objects including methods able to retrieve values for base language objects;

one or more instructions for defining said assignment function in more than one class, said assignment function taking a plurality of parse tree objects as arguments; and

one or more instructions for overloading said assignment function.

18. (original) The method of claim 17 wherein said assignment function overloads a mathematical operator.

19. (original) The method of claim 17 wherein the overloading of said assignment function is based on the context of the base language objects.

20. (Currently Amended) The medium of claim 17, wherein said instructions further ~~comprise: method comprises the further steps of:~~

one or more instructions for evaluating said class at compile-time, and

one or more instructions for adjusting the resulting class definitions from said evaluation to increase the efficiency of run-time performance.

21. (Currently Amended) The medium of claim 17, wherein said method instructions further ~~comprise: comprises the further step of:~~

one or more instructions for overloading a mathematical operator with said assignment function to alter the sequence of evaluation of operands usually followed in said programming language, said overloading designating the order of operand evaluation.

22. (Currently Amended) The medium of claim 17, wherein said instructions further comprise:
~~method comprises the further step of:~~

one or more instructions for calling a method in said parse tree object to determine the type of operator at the root of a tree.

23. (Currently Amended) The medium of claim 17, wherein said instructions further comprise:
~~method comprises the further step of:~~

one or more instructions for calling a method in said parse tree object to retrieve one of an associated left and right tree.

24. (original) The medium of claim 16 wherein the root of said parse tree data structure is one of a constant, variable, a mathematical symbol and a mathematical expression.

25. (original) The medium of claim 16 wherein said assignment function is not explicitly defined.

26. (original) The medium of claim 16 wherein said assignment function is used to identify in-place operations.

27. (original) The medium of claim 16 wherein said assignment function is used to identify and perform multiply and accumulate ("MAC") operations.

28. (original) The medium of claim 16 wherein said base language is one of C++, Java, System-C, VHDL, Verilog, C#, IDL, MATLAB and a language based on the .Net framework.

29. (original) The medium of claim 16 wherein said parse tree data structure is used to generate code for an embedded processor.

30. (original) The medium of claim 16 wherein said parse tree data structure is used in processor emulation.

31-36. (Canceled)

37. (Currently Amended) A computer-readable medium for use in a program development environment, said medium ~~holding instructions for execution of a method on an electronic device, said method comprising the steps of:~~

one or more instructions for providing a programming language;

one or more instructions for providing a language processor via said programming language, the language processor having built-in support for a parse tree data structure written in a base language, said parse tree data structure represented as a class, said class the basis for a plurality of parse tree objects, said parse tree objects including methods that retrieve values for base language objects;

one or more instructions for defining an assignment function, said assignment function taking a plurality of parse tree structures as arguments;

one or more instructions for calling said assignment function to determine the value of at least one assignment within at least one of said base language and a base language extension to said base language; and

one or more instructions for generating code for an embedded processor using said parse tree data structure.

38. (Currently Amended) A computer-readable medium for use in a program development environment, said medium ~~holding instructions for execution of a method on an electronic device, said method comprising the steps of:~~

one or more instructions for providing a programming language;

one or more instructions for providing a language processor via said programming language, said language processor having built-in support for a parse tree data structure written in a base language, said parse tree data structure represented as a class, said class the basis for a plurality of parse tree objects, said parse tree objects including methods that retrieve values for base language objects;

one or more instructions for defining an assignment function, said assignment function taking a plurality of parse tree structures as arguments;

one or more instructions for calling said assignment function to determine the value of at least one assignment within at least one of said base language and a base language extension to said base language; and

one or more instructions for using said parse tree data structure in software emulation.

39. (Currently Amended) In an object-oriented program development environment having a base language, a method comprising the steps of:

providing a programming language;

providing a language processor via said programming language, said language processor having built-in support for a parse tree data structure in said object-oriented program development environment, said parse tree data structure used as the basis for at least one parse tree object, said parse tree objects including methods ~~able to~~that retrieve values for base language objects;

defining an assignment function taking a plurality of parse tree structures as arguments in more than one class;

calling said assignment function to determine the value of at least one assignment within at least one of a base language and a base language extension; and

overloading a mathematical operator with said assignment function based on the context of a plurality of base language objects.